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Mamoon, Dawood and Murshed, S. Mansoob

Institute of Social Studies

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Politics Remains but Economics Leads and Peace Follows: Making a Case for India-Pakistan Peace Process in line with China Model^{*}

Dawood Mamoon¹
&
S Mansoob Murshed²

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Abstract:

The paper traces the causal links of Indo-Pakistan conflict with trade, military expenditure and democracy under multivariate time series framework from 1950-2005. We find that higher exports to outside world and increased bilateral trade have high propensity to reduce hostilities between both nations. Furthermore, historically high military expenditures in Pakistan have been a direct outcome of continued hostilities in its Eastern borders whereas Indian military expenditure is weakly related with the conflict. Political orientation of both countries does not seem to significantly affect the conflict either. Overall, the findings support the case for liberal (economic) peace than political (democratic) peace.

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¹ Doctoral Student and Royal Netherlands Fellow, Institute of Social Studies (ISS), PO Box 29776, 2502 LT, The Hague, The Netherlands, Phone#31 70 4260683, Fax# 3170 4260799, Mamoon@iss.nl

² Professor of the Economics of Conflict and Peace at the Institute of Social Studies in the Netherlands and he is also Professor of International Economics at the Birmingham Business School, University of Birmingham in the UK. He is the author of five books and 80 book chapters and journal articles. His research interests are in the economics of conflict, aid conditionality, political economy, macroeconomics and international economics. Institute of Social Studies (ISS), PO Box 29776, 2502 LT, The Hague, The Netherlands, Phone#31 70 4260591, Fax# 31 70 4260799, Murshed@iss.nl

'The destinies of our two nations are interlinked. We need to put the past behind us' (Indian Prime Minister Manmohan Singh in response to Pakistani President Pervez Musharraf's peace initiatives) *The Nation*, December 21, 2006

1 INTRODUCTION

Conflict may be motivated by factors such as historical grievances, the clash of civilizations (Huntingdon, 1996), or pure avarice. Outright hostility between states implies the absence of peaceful cooperation that can manifest itself in diminished inter-state commerce, which in turn could further exacerbate the rivalry between the same countries. In this paper we are concerned with inter-state rivalry between India and Pakistan, and not civil war. Civil war is the most dominant form of war at present, see Harbom and Wallensteen (2005) for data, and it is also a major obstacle preventing growth and poverty reduction (Murshed, 2002, 2006) in low-income developing countries. Despite the preponderance of civil war, inter-state rivalry has not entirely withered away, and these too can also divert substantial amounts of resources away from poverty reduction. Often, inter-state conflict is associated with forms of belligerency short of open armed warfare, as was common during the cold war. Such threats can be associated with the maintenance of large standing armies menacing each other, even when they do not openly fight. Other forms of aggressive behaviour between countries include trade restrictions, accusations that rival states sponsor terrorism, expelling diplomats and so on. India, Pakistan relations are a prime example of this form of inter-state rivalry. It has also been plausibly suggested that neighbours may be more belligerent towards one another compared to more distant pairs of nations. Geographically contiguous countries have both more to gain from cooperation, as well as greater temptations to fall into conflict (Chang, Polachek and Robst, 2004).

International trade allows one country to non-violently benefit from the endowments of another nation through peaceful exchange. Free trade expands the consumption and production set of nations engaged in international trade. Above all, trade is an important engine of economic growth, and by implication poverty reduction, even if it in certain cases exacerbates existing income inequalities.³ Furthermore, free trade integrates the world economy into an economy resembling that of one nation state. These are the standard text book gains from trade.⁴

³ We are not discussing unequal or colonial types of disadvantaging international trade as envisaged by Hobson (1903) or Lenin (1905).

⁴ It is very common in the anti-globalisation movement to emphasise the immiserising effects of greater international trade. Globalisation can increase the disparity between rich and poor nations, despite the fact that the latter group

An equally viable manner, however, of earning a living is through violence, see Skaperdas (1992). War is a way of expropriating the endowments of another country, but it is costly as it destroys part of both countries pre-existing wealth. In making a living, predation is an alternative to production, but it is not usually the most efficient, as predation (war or other forms of larceny) unnecessarily wastes resources. Such, unenlightened behaviour may be rational or optimal from the standpoint of the individual person or a nation, but is inefficient in the global sense. The work of Francis Edgeworth, writing in the late 19th century, provides a useful starting point in understanding the economic rationale for violence. Edgeworth distinguished between consent—and its absence—in human economic interaction:

The first principle of Economics is that every agent is actuated only by self-interest. The workings of this principle may be viewed under two aspects, according as the agent acts without, or with, the consent of others affected by his actions. In wide senses, the first species of action may be called war; the second, contract. [Edgeworth, 1881, pp 16-17].

In summary, international economic interactions between nations may involve peaceful trade, or it could be belligerent with attenuated economic interaction. Outright war is just one manifestation of the rivalry between nations; the armed peace is equally consistent with aggressiveness. India and Pakistan are a case in point. They have had at least four large scale military confrontations (1948, 1965, 1971 and 1999), but otherwise spend a great deal of time in uncompromising aggressive posturing vis-à-vis each other. The purpose of this chapter is to explore whether greater inter-state trade, democracy and reduced military spending lower belligerence between India and Pakistan. The rest of this chapter is organised as follows: section 2 states the salient stylised facts regarding India-Pakistan interaction, section 3 contains an outline of our empirical hypotheses and data sources, finally section 4 presents our conclusions.

might benefit from trade via increased economic growth. Furthermore, even when growth in the aggregate economy takes place due to increased exports, at a disaggregated level there are always winners and losers. And, development non-governmental organisations often concern themselves with the losers. In a situation where growth in aggregate terms has taken place, how gainers may compensate losers to produce a truly win-win outcome is a matter of redistributive fiscal political economy that is beyond the scope of this work.

2 Stylised Facts Regarding India-Pakistan Interactions

Table 1: The Military Burden in Selected Countries

Countries with Conflict	Defence Expenditure As a % of GDP	Countries without conflict	Defence Expenditure As a % of GDP
India (2004)	2.34	Canada (2004)	1.19
Pakistan (2004)	4.14	Germany (2004)	1.38
Egypt (2004)	2.76	Holland (2004)	1.73
Syria (2003)	6.97	Sweden (2004)	1.73
Israel (2004)	9.30	Argentina (2004)	1.01
Lebanon (2003)	3.92	Mexico (2004)	0.51
Saudi Arabia (2004)	7.70	Nicaragua (2004)	0.69
Oman (2001)	12.16	Panama (2004)	0.97
Yemen (1999)	5.28	Paraguay (2004)	0.70
South Korea (2004)	2.45	Peru (2004)	1.20
USA (2004)	3.98	Guatemala (2004)	0.40
UK (2004)	2.57	El Salvador (2004)	0.66

The most recent year for which data is available is given in parenthesis.

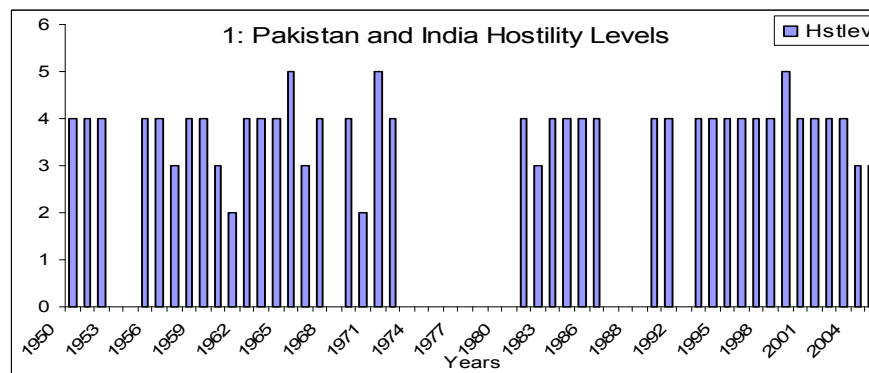
Source: World Development Indicators (2006)

Both countries spend a considerable amount in military expenditure, measured as a proportion of GDP (see table 1). In fact, they have among the highest military burdens in the world outside the Middle East. One can surmise, that such large scale military expenditure detracts from development and poverty reduction (see also Deger and Sen, 1990) in the region where the largest concentration of the world's poor live (as defined by below purchasing power parity \$1 a day). There is also a consensus which states that sustained high levels of military expenditure as a proportion of national income reduce economic growth for developing countries.

There are other forms of belligerent behaviour to be considered. India, in particular, frequently accuses Pakistan of sponsoring terrorism in her territory. But occasionally they make goodwill gestures, such as sending out peace buses between cities like Delhi and Lahore, and agree to cricket tours. Less frequently, major concessions are made mainly by Pakistan, such as President Musharraf's willingness to put aside the long standing Pakistani demand and United Nations resolution for a plebiscite to settle the future of Kashmir.⁵ Figure 1 charts the hostility levels of the two states on a scale of 0-6. It has never been below 2, but usually at high level of 4, which measures belligerency short of outright war. Thus, normal India-Pakistan relations are characterised by unusually high hostility levels.

⁵ See http://news.bbc.co.uk/2/hi/south_asia/3330031.stm.

Figure 1: Hostility between Pakistan and India

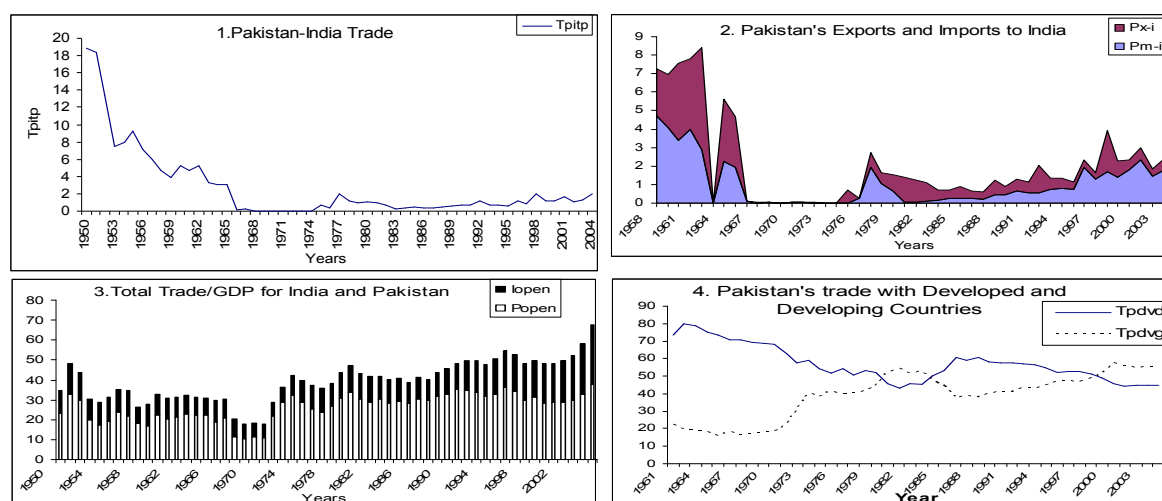


- 1 No militarised action
- 2 Threat to use force
- 3 Display of force
- 4 Use of force
- 5 & 6 War

Source: Faten et al (2004)

Polachek (1997) and Polachek and Seigle (2006) argue that aggressive posturing and other forms of belligerent behaviour between states disrupts trade and the costs emerge through a deterioration in the terms of trade. Trade between neighbours is associated with lower transport costs, and therefore more efficient compared to trade with distant partners. Wars and other forms of conflict among geographically contiguous states involve greater losses, as more efficient geographically proximate trade is displaced, Chang, Polachek and Robst (2004). This effect, however, depends on the absence of alternative trading partners, who despite greater distance may be equally or more efficient. Figure 2 shows that India-Pakistan trade (as a proportion of Pakistan's total international trade) steadily declined from nearly 20% in the early 1950s, plummeting to almost zero after their 1965 war, and has shown some signs of recovery in the 1990s. We concern ourselves with official trade, and not unofficial and illegal smuggling activities. The latter is usually a manifestation of restrictions on legal trade, and the consumer ends up paying for imported goods that are effectively taxed, except that the revenues accrue to smuggling entrepreneurs.

Figure 2: Patterns in Pakistan and India Trade



Source: International Financial Statistics 2006 (IMF)

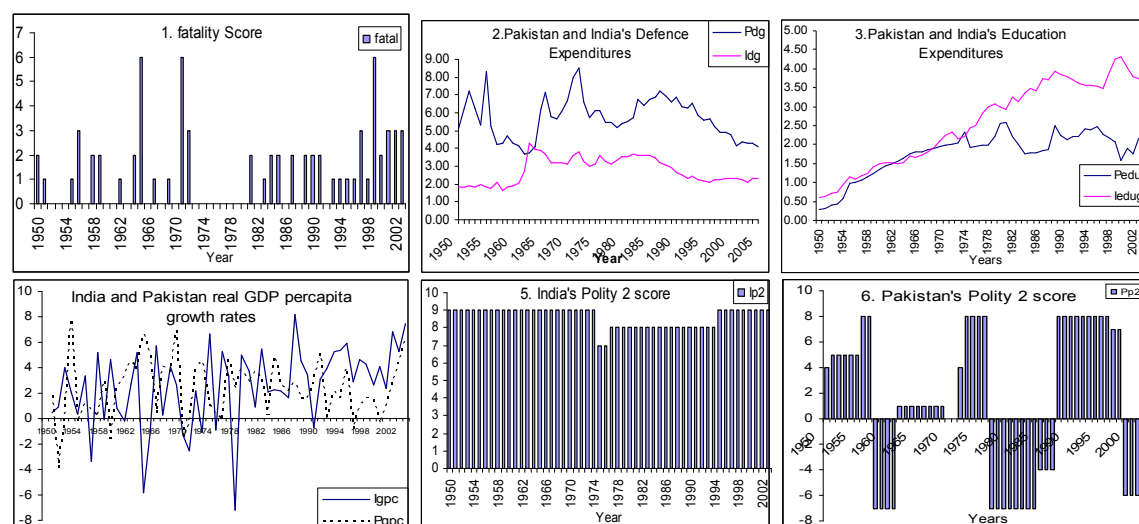
Official trade between India and Pakistan is still below the levels of the 1950s, which was shortly after the time two nations were separated politically. This is despite the fact that India and Pakistan have fairly open economies at present. Traditionally, Pakistan has been considerably more open than India (Figure 2, panel 3). Pakistan now trades more with developing countries compared to developed countries as is shown by graph 4 in figure 2. In summary, conflict and rivalry are symptomatic of the absence of cooperation, including lower trade volumes. Equally, conflict may be said to be a consequence of the lack of peaceful trade.

A related issue concerns the so-called democratic peace. Put simply, the idea is that established democracies do not go to war with each other, but cooperate instead because of shared values. We will review this and other related concepts more fully in the next section. The Polity score of democracy ranges from 0-10, with advanced industrialised democracies usually getting 10. Similarly there is an autocracy score of between -10 to 0. Together, the autocracy and democracy scores gives us an average, acting as an indicator of the overall political system, which is graphed above. Graph 5 in figure 3 shows that India has one of the highest democracy scores in the developing world for the entire 50 year period (7-9)⁶, whereas Pakistan's experience with democracy is more mixed with high autocracy scores at continuous time intervals, associated with military coups in 1958, 1969, 1977 and

⁶ Indeed the only developing countries that compare to India in this respect are Colombia, Costa Rica and Mauritius.

1999. Indeed, it can be argued that true democracy implies a score of 8 or above.

Figure 3: Pakistan-India Conflict, Defence, Development and Democracy Trends



Sources: Polity IV Project (Center for International Development and Conflict Management) www.cidcm.umd.edu/insr/polity, Pakistan and India Economic Survey and Education Statistics 2006 (World Bank)

Comparisons of graphs 2 and 3 in figure 3 indicates that military expenditures tend to move inversely with development (education) expenditure, providing *prima facie* evidence that large military expenditure crowds out development in the social sector. Pakistan's military expenditure is consistently above India's except in the mid-1960s when India had wars with both China and Pakistan. In Pakistan's case, military expenditure as a proportion of GDP has historically been at 5%, but rising during and after its 1965 and 1971 wars with India to as high as 8%. The average defence expenditure of Pakistan is 5.5% of GDP in the 1950-2005 period, whereas for India it is about half at 2.8% of GDP. Since the 1990s Pakistan's military expenditure has been falling, and is now at a little above 4% of GDP, which represents a historical low. As Indian education expenditure rose to 4 % of GDP in the 1990s, its defence expenditure fell from nearly 4% of GDP in the mid-1960s to less than 3% (it has rarely been below 2% of GDP). Pakistan's education public expenditure is stagnating at around 2% of GDP.

The opportunity costs of conflict rise, when countries move to higher stages of economic development (see Murshed, 2006), as they have more to lose from conflict, and have more resources to negotiate peaceful settlements. The 1990s is considered to be a

golden decade for India as GDP growth rates reached a high of 8%, while on average Indian economy grew at 5 to 6% annually, along with a significant decline in poverty. Pakistan has been growing at an average of 6% for the last 3 to 4 years. Traditionally, from the early 1960s up to the early 1990s, Pakistan's was the faster growing economy of the two. But India is currently growing faster, and it also did so in the 1950s. Both countries are on track to meet the millennium development goals with regard to poverty, and both nations are in the second most rapidly growing region in the world (South Asia, see World Development Indicators, 2006).

There is more to India Pakistan conflict than merely Pakistan's political orientation and a comparison of bilateral economic growth rates. This is because of the fact that despite high growth rates and relatively high democracy scores in Pakistan up to 1999, conflict between the countries escalated in the 1990s. Furthermore, the current regime in Pakistan with a strong military orientation (the military is highly influential and the President continues to be the army chief), and therefore less democratic, is making major unilateral concessions to India vis-à-vis their long standing disputes over Kashmir. Could that be related to the very recent impressive growth record in Pakistan? If anything, conflict between the two nations can be best understood in a multivariate framework where the relevant variables and processes (economic performance, integration with rest of the world, trade between the conflicting nations, military expenditure, population) are simultaneously taken into account. We aim to investigate the causal links between bilateral conflict and most of these variables in a time series framework, between 1950 and 2005 in most cases.

3 EMPIRICAL ANALYSIS

Hypotheses:

H₁: Greater inter-state commerce lowers various forms of inter-state conflict.

H₂: More military spending raises conflict. More relative military expenditure by the regional hegemonic power may lower conflict, as the hegemon may have internal conflict and other neighbours to militarily confront.

H₃: Development expenditure (such as public spending on education) should lower conflict.

H₄: GDP growth will decrease inter-state conflict.

H₅: Increases in dyadic democracy scores will lead to less conflict. Increased democracy may lower the cost of concessions and compromise with former enemies.

Our first hypothesis relates to the concept of the '*liberal*' peace. A lower degree of economic inter-dependence, reflected in small trade values as a proportion of total trade will be reflected in greater inter-state belligerence. We may also utilise a metric of total openness, which measures a country's dependence on foreign trade to gauge the conflict reducing properties of international trade, more generally. Secondly, increased military expenditure, which detracts from spending on development, is likely to increase confrontation and conflict. Note, that we measure conflict not just via outright war, but also include other forms of hostile behaviour. But the regional super-power, India, may have a large number of civil wars to cope with, as well as disputes with other countries. India has had a significant number of domestic civil wars⁷, and in the past has had a war with China, intervened in Sri Lanka and so on. Thirdly, development expenditure (say on education) is likely to lower conflict, because it implies lesser military spending, and increased income through economic growth in the future which increases the utility of citizens via increased consumption. It also lowers poverty. Fourthly, increased per-capita income reduces conflict as people have more to lose from the destructiveness of war or confrontation (there is less poverty) and more to gain from trade: see Lipset's (1960) hypotheses about the modernising and beneficial effects of economic growth on democratic development and peace. Higher growth also makes granting concessions to rivals less costly, as there are more resources going around, which may help to buy-off the disaffected. Finally, we postulate that increased dyadic democracy (in this case Pakistan's, as India is a stable democracy) lowers conflict because of the theories of the democratic peace, as well as the possibility that higher democracy may also lower the political costs of making concessions to rivals, as states are more democratically mandated and less answerable to special interest groups, including the military.

The literature on inter-state conflict classifies conflict data sets into two categories: 1) war data and 2) events data (Polachek and Seiglie, 2006). War data sets focus on more hostile aspects of inter-state interactions such as crises, wars or militarized inter-state disputes (Jones, Bremer and Singer, 1996). The most comprehensive wars data set is available under Correlates of War Project (COW) which has updated war data sets employed by Wright (1942), Richardson (1960), and Singer and Small (1972). The data set covers all major militarized inter-state disputes in which one or more states threaten, display, or use force against one

⁷ According to <http://www.prio.no/cwp/ArmedConflict>, the Uppsala-PRIO database on armed conflict India has had the second highest number of civil wars following Burma since 1960.

or more other states between 1816 and 2001. The data provides coded information on fatality levels, hostility levels, duration of the conflict, highest action taken by state in the dispute.

The other major data set on inter-state armed conflict is hosted by the Uppsala Conflict Data Project (UCDP) with the collaboration of the International Peace Research Institute, Oslo (PRIO) and is collected on an annual basis and covers the full post-World War II period, 1946–2003. The data set provides coded information on the intensity level of the conflict. There are two different intensity levels: 1) minor armed conflict and 2) wars. The PRIO data set provides information on annual battle deaths. The battle deaths data set is available for use with the Correlates of Wars in the period 1900–97. UCDP also provides information on precise battle deaths in inter-state armed conflicts for 2002–05.

Events data focuses on all inter-state events and bilateral interactions reported in newspapers. McClelland's (1978) World Events Interaction Survey (WIES) is probably the first of its kind based on bilateral interactions, occurring between 1966–1992 and reported in the New York Times. The WEIS data set codes every reported event into 22 broad categories ranging from extending aid to military assaults using force. Azar's (1980) Conflict and Peace Data Bank (COPDAB) is an extensive longitudinal collection of about one million daily events reported from forty seven newspaper sources between 1948–1978. The data set codes events into 15 broader categories representing different kinds of conflict and cooperation. Categories 1 (voluntary unification) through 7 (minor official exchanges) represent cooperation and categories 9 (mild verbal expressions displaying discord) through 15 (extensive war acts causing deaths) represent conflict. Then there is Virtual Research Associates (VRA) data set which is derived from dyadic events reported in wire services and covers inter-state interactions from 1990–2001 (Polachek and Seiglie, 2006).

Since we are interested in the evolution of India-Pakistan conflict over a period of the last 55 years, we will use Uppsala/PRIO and COW inter-state war data set instead of events based data sets because the former data sets provide conflict data which covers most of the period of 55 years (1950–2005) which we have selected for our analysis. The events data set is not available for longer period of times, and thus may not provide information on the evolution of conflict in a longer term. Though the events data set captures daily observations, our macroeconomic and democracy data varies annually which limits the use of daily information on conflict. Secondly, as shown in figure 1, hostility between India and Pakistan has usually been high in most of last 55 years, enabling

the COW data set to capture the severity of conflict in most years of the dispute. Consistently high hostility levels between the two countries, the greater coverage by COW and Uppsala data sets, and the availability of macroeconomic and democracy data on an annual basis limits the scope of using the events data sets.

Generally dyadic trade is captured by sum of imports and exports between actor and target countries (Polachek and Seglie, 2006). Figure 2 shows that in the last 55 years the patterns of inter-state trade between Pakistan and India have changed. Before trade between both countries collapsed to near zero in early 1970s, Pakistan was exporting more to India. Since the 1970s, Pakistan is importing more from its neighbour. In the 1950s, Pakistan and India's trade with each other constituted a significant amount of their respective total trade. However, after the 1965 war, India-Pakistan trade never reached more than 2 percent of their respective total trade levels. Till the late 1980s, India had been a relatively closed economy, whereas Pakistan has traditionally been more open. To capture the evolution of international integration in both countries, we will not only use Pakistan's trade with India as percentage of Pakistan's total trade (tpitp) but also India's trade with Pakistan as a percentage of India's total trade (tpiti). If trade reduces conflict, trade among more countries should reduce conflict even more (Dorussen, 1999). India and Pakistan are active trading nations. It will be interesting to see how more trade with the rest of the world affects the India-Pakistan dispute. We construct 4 dyadic proxies to capture combined integration level for both countries. Pakistan's total trade as a ratio of India's total trade and India's total trade as a ratio of Pakistan's total trade are the first two indicators. Since exports are more growth enhancing and thus more effective for conflict mitigation than imports, we differentiate between exports and imports by taking both countries' total exports as a percentage of the sum of their GDPs, as well as total imports separately as a percentage of the sum of their GDPs.

Military expenditures can reflect hostility, as well as deterrence (Polacheck and Seglie, 2006). In the Pakistan-India case, we would like to examine how each country's military expenditure/ military burden affects the dispute. Figure 3 shows that Pakistan's spending on military expenditure as a proportion of GDP is higher than India's. Additionally, since military expenditures may also capture the capability of a country to deal with civil unrest or intra-state conflict, Indian military expenditure can also be explained in terms of the high prevalence of continuing intra-state conflicts in various regions of India. Pakistan has had fewer civil wars. This may mean that Pakistan's military burden captures its security concerns vis-à-vis India solely. If so, dyadic variables which take the military

burden of Pakistan as a ratio of the Indian military burden, should affect conflict positively and vice versa. We construct 7 different proxies of military burden utilizing data on military expenditures as well as military personnel from Correlates of Wars.

The conflict literature suggests that politically similar regime types share peace (Oneal and Russett, 1999; Henderson, 2002 to cite only two examples). Secondly more democratization leads to more peace as democracies are less prone to fight with each other (Polachek and Seglie, 2006). There are two notions of peace between nations in international relations or international politics theory that go beyond the traditional peace with collective security: the democratic peace and the liberal peace. The first reflects the wave of ostensible democratization that swept through the world following the end of the cold war in 1991; the second argument has economic globalization, and the increased interdependence between states, as its empirical basis. It is useful to remind ourselves of the conventional international relations theory regarding relations between states. Nations are meant to exist in a state of anarchy vis-à-vis each other, where economic and military power are the two levers exercised in their interaction. This means might is right, and unlike in domestic politics there is no role for values. Peace can prevail providing mechanisms exist to ensure collective security.

Since the end of the cold war, however, there has been the growth of the notion of the democratic peace, roughly implying that nations that share common values will not go to war with each other. The intellectual basis for this argument has been traced back to Immanuel Kant's (1795) work on the Perpetual Peace, where a like mindedness referred to as *cosmopolitanism* would prevent outright war between republics⁸; a tendency that could be reinforced by commercial interdependence (Gelpi and Grieco, 2003). Mirroring Kant's thoughts, the contemporary philosopher, John Rawls's (1999) notion of peace between liberal societies or nations is another form of the democratic peace; see Milanovic and Wenar (2007). Rawls (1999) argues that liberal societies do not go to war with each other because their needs are satisfied, they are non-acquisitive in the sense of not wishing to grow beyond an achieved steady-state level of (presumably high) income⁹, and they are tolerant of difference. They will only fight in self-defence, and invade to prevent gross human rights abuses such as genocide in other countries. They can,

⁸ It is unclear whether this means solely democratic government, or democratic government characterised by checks and balances, and a separation of powers, see Franceschet (2000).

⁹ As Milanovic and Wenar (2007) point out even rich societies wish to get more affluent; the desire for pecuniary advancement may be ever increasing among some; basic wants expand with the invention of new goods and services.

however, occasionally be duped into supporting foreign wars, as in the case of Vietnam or the presence of weapons of mass destruction in Iraq. Imperfect liberal societies and democracies may also go to war, because it is in the interests of the elite.

Theories of the liberal peace may be traced back to the Baron de Montesquieu's, *Spirit of the Laws* (1748), where he states that commerce tends to promote peace between nations, mutual self-interest precludes war; trade also softens attitudes of peoples towards each other, making them more tolerant of each other. This is the idea behind our first empirical hypothesis.

History, however, is replete with examples of liberal societies and democratic nations going to war with other countries. War is one way of acquiring the endowments of another country, peaceful trade is an alternative. This is precisely what colonial wars were about; markets or natural resource endowments in the global South were captured by force. Kant (1795), himself spoke of these colonial wars, and how they despoiled the invaded. Later, Hobson (1903) and Lenin (1905) developed their theories of economic imperialism, where armed force played an important part. What may be required is a combined theory of the democratic and liberal peace, or the notion of the liberal peace augmented by democracy.

Polachek (1997) makes a case for the liberal peace, arguing that a common polity (democracy) is largely immaterial. He presents empirical evidence to suggest that advanced democracies cooperate, not because of their similar political systems, but due to their vast and multiply intersecting economic interdependence. Barbieri (1996) demonstrates that the liberal peace based upon the pacific effects of economic interdependence may be a chimera. Oneal and Russett (1999) and Hegre (2000), however, argue that economic interdependence reinforces peace, particularly between democracies. Perhaps, we need a theory that embeds democracy with economic interdependence. As Milanovic and Wenar (2007) state internal democratic political processes are not violent because of the complex, dense and repeated interactions between actors. The same argument can be applied to the realm of economics. When extended to relations between nation states, it means that that established democracies that are economically very interdependent, as well as very familiar with one another (as in the developed world) will not go to war. But democracies may behave belligerently with non-democracies, a view also echoed by Gelpi and Grieco (2003). Furthermore, democracies may go to war with other democracies that are distantly located, culturally disparate and considerably poorer. Indeed, Robst, Polachek and Chang (2006) present some evidence to suggest that more democratic nations

could exhibit some degree of belligerence to less democratic countries. Their arguments may apply to India-Pakistan relations, as India is consistently more 'democratic' compared to Pakistan. Also, increased democratic levels can mandate concessions and re-negotiation with neighbours. Democracies or liberal societies that become poor, or fall behind other affluent nations because of the lack of growth or systemic changes such as the collapse of socialism may become aggressive; see Milanovic and Wenar (2007). What is also required for peace in a pair-wise dyadic sense between nations is not just democracy and economic interdependence, but also high levels of development (see Hegre, 2000), as high income nations have most to lose from war with one another. Gelpi and Grieco (2003) make the argument that more democratic nations have a greater stake in growth (autocracies fearing that growth may enhance the power of the potential opposition), and trade openness facilitates growth, hence democracies that are more open may be more pacific with their neighbours. But, there are plenty of examples of dictatorships fostering growth (Indonesia, Singapore). Equally, many dictatorships favour open economic policies, and many democracies that are protectionist because it is against the interests of the majority (who may be poor). These arguments suggest that growth, increased economic interaction, as well as rising democratization are likely to promote peace between India and Pakistan.

To capture democracy levels for India and Pakistan, we turn to the Polity IV project hosted by Center of International Development and Conflict Management (CIDCM). Polity IV contains coded annual information on regime and authority characteristics for all independent states (with a population greater than 500,000) in the global state system, and covers the years 1800-2004. The data set captures general openness of political institutions by providing country level democracy scores ranging 0 to 10, where 0 is the lowest value for democracy and 10 the highest. Similarly, autocracy measures the general closedness of political institutions ranging from 0 to -10. Polity IV also computes a combined polity score by subtracting autocracy scores from the democracy scores for the corresponding year. The value of this Polity score ranges from -10 to 10, where -10 denotes the highest autocracy level, and 10 the maximum democracy score. We have graphed the Polity score for India and Pakistan in figure 3 from 1950 to 2005. Although India always takes a high positive value of 7 or above, Pakistan frequently takes on negative values. We construct a dyadic variable of democracy for both countries by combining multiplying their Polity scores, following Polachek and Seigle (2006) for example.

Figure 5: Dyadic democracy scores for Pakistan and India



As hypothesized above, conflict between two nations may abate with economic growth as states approach higher average income levels, or if they divert funds from the military towards social development. Here we take the mean average of India and Pakistan's real GDP per capita growth rates and the mean average of India and Pakistan's education expenditures as a proportion of respective GDPs as dyadic proxies for economic and social development respectively.¹⁰ We constructed the series for both countries by dividing GDP at constant prices taken from economic surveys, and dividing it by population levels. The data was later tallied with GDP per capita series available at World Development Indicators (2006) version. India and Pakistan are one of the most highly populated countries in the world. Pakistan has 160 million inhabitants, and India has over a billion citizens. In line with the earlier literature, we also take mean average of both countries populations as a standardising variable in our analysis (i.e. see Polachek, 1997).

We can now proceed to VAR analysis as our empirical methodology. Our reduced form VAR model for conflict is as follows

$$Conf_t = \alpha_1 + \alpha_{2,t-i} Conf_{t-i} + \alpha_{3,t-i} Tr_{t-i} + \alpha_{4,t-i} Mil_{t-i} + \alpha_{5,t-i} E_{t-i} + \alpha_{6,t-i} G_{t-i} + \alpha_7 Demq + \alpha_8 P_t + E_t \quad (1)$$

Where $Conf_t$, Tr_{t-i} , Mil_{t-i} , E_{t-i} , G_{t-i} , $Demo_t$ and P_t depict inter-state conflict, bilateral or multilateral trade, military burden, education expenditure, real growth rate of GDP per capita, dyadic democracy score and population, t ranges from 1950-2005 and $i = 1, \dots, p$. Here p is the optimal lag structure for the VAR model. $\alpha_{2,t-i}$, $\alpha_{3,t-i}$, $\alpha_{4,t-i}$, $\alpha_{5,t-i}$ and $\alpha_{6,t-i}$ are (6×6) metrics (for every $i = 1, \dots, p$).

¹⁰ There is insufficient time series data for public health spending data for India.

The model above is primarily run for the number of fatalities, *Fatal* under multiple specifications of bilateral and multilateral trade and the military burden to see how trade between Pakistan and India, their integration levels with the outside world and their military expenditures have determined the severity of their disputes over time. We have also constructed 5 additional proxies of conflict from COW and PRIO data sets: *Volfatal*, *Cnfpj*, *Dur*, *Hstlvl* and *Hiact*. All of them capture severity and intensity of the conflict under different definitions. Through out the analysis, mean averages of India and Pakistan's education expenditures (*Edupi*), real GDP per-capita growth rates (*Gpi*), population size (*Poppi*) and combined democracy scores (*Demopi*) remain common regressors.

Table 2 provides the summary of results for multiple granger causality tests under different specifications of equation 1. For example the results show that *Xmpi*, *Xmip*, and *Xpi* significantly cause *Fatal* and the nature of relationship is negative. This means that international integration is of prime importance for the success of peace talks between two nations. Since table 2 also shows that *Mpi* is insignificantly related with *Fatal*, we can conclude that export capabilities of both countries to outside world are more important for conflict mitigation than imports. This makes sense especially in case of India where the export capabilities are highly correlated with its economic growth where as in a wider context high growth rates of India and Pakistan have been one of the prominent motivators of peace talks through the sample period of 55 years.

Furthermore, trade between India and Pakistan is also important for improving relationships. However as the early graphical analysis show, imports from India have become more significant than exports to India, which means that more trade with India would lead to increase in dependency of Pakistani markets on Indian exports. This is an important finding in light of the results on the proxies of military burden. It appears that Pakistan's military expenditure is more prominently associated with India-Pakistan conflict than Indian military expenditure. Any worsening situation of the Eastern borders lead to a positive shock in Pakistan's military burden. Since the hostilities between both countries have only fluctuated in its level of severity but continued for last 55 years since independence from the British in 1947, constant rise in military burden in Pakistani case is highly correlated with the conflict between two nations. Thus it is in Pakistan's prime interest to decrease hostilities with the neighbor in order to curtail military expenditures to some optimal levels and more resources can be channeled to development sector. One economic route, in order to create such favorable circumstances, is to open Pakistani markets to cheaper Indian imports which would increase the economic

dependency between two nations and opportunity costs of hostilities for both countries would rise.

We modify our equation 1, and assume democracy to be endogenous to the system to carry out granger causality tests on *Demopi* to test the cause and effect of combined democratic score of Pakistan and India on conflict. We find that democracy or political orientation does not matter much in decreasing hostilities between two nations. Thus the case for peace between two nations is more economic in nature than political. Since in all cases *Demopi* does not cause conflict when ever it is endogenous to the system, we don't provide a separate table of results.

4 Conclusions

We find that more trade between India and Pakistan decreases conflict. We can make these inferences because we utilize techniques of time series econometrics that can investigate causation and also correct for the reverse causality that bedevils the relation between trade and conflict. For example, increased trade will reduce conflict, but reduced conflict could also facilitate more trade between two countries. Our methodology allows us to avoid these problems by employing causality tests upon time series data. The chain of causation is from increased trade to conflict reduction, and not the other way around, albeit with a time lag. Greater Indian access to Pakistani markets will help decrease hostilities between the two countries. A regional trade agreement along the lines of a South Asian Free Trade Agreement (SAFTA) could enable freer access to the markets of member countries, and has a high potential for the improvement of relations between India and Pakistan on long term basis. Pakistan and India's degree of openness to world trade is the dominant economic factor in conflict resolution. One would imagine that in the counterfactual case of significant mutual inward investment, that too would also decrease mutual belligerent tendencies.

Our results seem to suggest that Pakistan's relative military expenditure is positively related with conflict, whereas Indian relative military expenditure has a deterrent effect on conflict (see table 2). This result, however, needs to be interpreted with caution. It does not necessarily mean that Pakistan is the principal actor initiating inter-state conflict with India. Rather it means that India, the region's hegemonic power, has other domestic and international concerns to which its defense spending is targeted, besides its disputes with Pakistan. India, for example, has unilaterally massed troops on Pakistan's borders in 1951 and 2002. Pakistan is making

unilateral concessions in connection with its disputes with India. However overall, military expenditures are still at high levels in both countries and are diverting scarce resources away from social development spending, such as on education, and poverty reduction. Education spending has been shown to be good for both peace and economic progress.

In an ideal world increased dyadic democracy between pairs of nation should reduce inter-state hostility according to the democratic peace hypothesis; this relationship in our case is present but weak. Peace initiatives, it should be remembered, are not the sole prerogative of democracies; they can also be made by countries which are less than perfectly democratic out of economic self-interest. Perhaps, as pointed out by Franceschet (2000), the true notion of democratic peace rests with a view of cosmopolitan democracy embracing citizens rather than nations, and the Kantian categorical (moral) imperative to secure the inner dignity (rights) of every individual human being as the ultimate end. This achievable utopia is only likely to emerge at higher levels of economic development.

Our findings, however, veer towards the liberal peace hypothesis. Economic progress and poverty reduction combined with greater openness to international trade in general are more significant drivers of peace between nations like India and Pakistan, rather than the *independent* contribution of a common democratic polity. So it is more economic interdependence rather than politics which is likely to contribute towards peaceful relations between India and Pakistan in the near future. In many ways, our results for an individual dyad echo Polcahek's (1997) work across several dyads, where it is argued that democracies cooperate not because they have common political systems, but because their economies are intricately and intensively interdependent. As pointed by Hegre (2000), it is at these higher stages of economic development that the contribution of common democratic values to peace becomes more salient. Meaningful democracy cannot truly function where poverty is acute and endemic, even in ostensible democracies such as India. In the final analysis, it may be that democracy itself is an endogenous by-product of increased general prosperity, as suggested nearly half a century ago by Lipset (1960).

In the context of the findings, one can say that current government of Pakistan has rightly taken the initiative to bring India back to the negotiation table for settlements of bilateral issues like Kashmir dispute which is much of a cause for tensions between the two nations. The acceptance of Pakistani part of Kashmir as a disputed territory by the Pakistani side indicates a major diplomatic shift and

provides a significant space for dialogue for a solution which would then be mutually acceptable for both sides. Furthermore, as a two prong strategy towards peace, the government of Pakistan has combined dispute settlement initiatives with increased trade incentives for India, as Pakistan has announced a further 5% decrease in tariffs on 1077 Indian products by the beginning of 2007.

Finally, this paper has made a significant policy contribution regarding India-Pakistan peace process. India being a new economic power house and Pakistan with an emerging economy should mean that Indo-Pak conflict has strong economic implications for both countries as well as the region itself, may be unlike any inter state conflict in the world. Since both countries also have a potential to be serious drivers of regional prosperity, it may also be noted that peace talks and solution of bilateral issues between both nations may eventually bring political and economic stability to the larger South Asia, which has long been trapped into the shackles of poverty, through initiatives like SAFTA.

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Table 2. Multiple Granger Causality Wald Tests Based on VAR

Direction of Causality	Cause And effect	RC	Direction of Causality	Cause And Effect	RC
<i>Tpitp</i> → <i>Fatal</i>	(-)*	×	<i>Milbrd5</i> → <i>Cnfpi</i>	×	×
<i>Tpiti</i> → <i>Fatal</i>	(-)**	×	<i>Edupi</i> → <i>Cnfpi</i>	(-)*	×
<i>Xmpi</i> → <i>Fatal</i>	(-)**	×	<i>Gpi</i> → <i>Cnfpi</i>	(-)*	×
<i>Xmip</i> → <i>Fatal</i>	(-)*	×	<i>Xpi</i> → <i>Dur</i>	(-)*	×
<i>Xpi</i> → <i>Fatal</i>	(-)*	×	<i>Milbrd1</i> → <i>Dur</i>	×	×
<i>Mpi</i> → <i>Fatal</i>	×	×	<i>Milbrd2</i> → <i>Dur</i>	(-)**	×
<i>Milbrd1</i> → <i>Fatal</i>	(+)**	×	<i>Milbrd5</i> → <i>Dur</i>	×	×
<i>Milbrd2</i> → <i>Fatal</i>	(-)**	√	<i>Edupi</i> → <i>Dur</i>	(-)*	√
<i>Milbrd3</i> → <i>Fatal</i>	(+)*	×	<i>Gpi</i> → <i>Dur</i>	×	×
<i>Milbrd4</i> → <i>Fatal</i>	(-)*	×	<i>Xpi</i> → <i>Hstlvl</i>	(-)*	×
<i>Milbrd5</i> → <i>Fatal</i>	×	×	<i>Milbrd1</i> → <i>Hstlvl</i>	(+)*	×
<i>Edupi</i> → <i>Fatal</i>	(-)**	√	<i>Milbrd2</i> → <i>Hstlvl</i>	(-)*	×
<i>Gpi</i> → <i>Fatal</i>	(-)*	×	<i>Milbrd5</i> → <i>Hstlvl</i>	×	×
<i>Xpi</i> → <i>Volfatal</i>	(-)**	×	<i>Edupi</i> → <i>Hstlvl</i>	(-)*	×
<i>Milbrd1</i> → <i>Volfatal</i>	(+)*	×	<i>Gpi</i> → <i>Hstlvl</i>	(-)**	×
<i>Milbrd2</i> → <i>Volfatal</i>	(-)*	×	<i>Xpi</i> → <i>Hiact</i>	(-)**	×
<i>Milbrd5</i> → <i>Volfatal</i>	×	×	<i>Milbrd1</i> → <i>Hiact</i>	(+)**	×
<i>Edupi</i> → <i>Volfatal</i>	×	×	<i>Milbrd2</i> → <i>Hiact</i>	(-)**	×
<i>Gpi</i> → <i>Volfatal</i>	(-)**	×	<i>Milbrd5</i> → <i>Hiact</i>	×	×
<i>Xpi</i> → <i>Cnfpi</i>	(-)*	×	<i>Edupi</i> → <i>Hiact</i>	(-)*	×
<i>Milbrd1</i> → <i>Cnfpi</i>	(+)*	×	<i>Gpi</i> → <i>Hiact</i>	(-)**	×
<i>Milbrd2</i> → <i>Cnfpi</i>	(-)*	×			

*, **, *** shows significance at 1%, 5% and 10% level, RC stands for reverse causation, √ means causes and × means does not cause, + or - in parenthesis implicitly means causes and shows the nature of relationship among two variables.

DATA and SOURCES

Cnfpi: Intensity of Conflict between Pakistan and India, Scores 1 (Minor) when 25 to 999 battle-related deaths and 2 (War) when at least 1000 battle-related deaths in a given year, Years: 1950-2003, UCDP/PRIO Armed Conflict Data set Version IV.

Edupi: Average of Pakistan's education expenditure over GDP plus India's education expenditure over GDP, Years: 1950 to 2005, Sources: National Surveys and World bank

Demopi: Pakistan and India's combine democracy score (by adding 10 to India and Pakistan's Polity2 values for each year and then taking the product of these values in order to covert the variable in dyadic form).

Durpi: Number of days a conflict lasts in a year between Pakistan and India, Years: 1950-2003, Source: COW Inter-State War Data, Version 3.02, Faten et al (2004)

Fatal: Annual fatality level of conflict between Pakistan and India, scores from 0 to 6

- 0 None
- 1 1-25 Deaths
- 2 26-100 Deaths
- 3 101-250 Deaths
- 4 251-500 Deaths
- 5 501-999 Deaths
- 6 >999 Deaths

Gpi: Mean average of real GDP per capita growth rates for Pakistan and India, Years: 1950 to 2005, Sources: Economic Surveys and World Bank.

Hiact: Highest action by Pakistan and India in annual corresponding dispute [bracketed numbers refer to corresponding hostility level]

- 0 No militarised action [1]
- 1 Threat to use force [2]
- 2 Threat to blockade
- 3 Threat to occupy territory [2]
- 4 Threat to declare war [2]
- 5 Threat to use CBR weapons [2]
- 6 Threat to join war
- 7 Show of force [3]
- 8 Alert [3]
- 9 Nuclear alert [3]
- 10 Mobilisation [3]
- 11 Fortify border [3]
- 12 Border violation [3]
- 13 Blockade [4]
- 14 Occupation of territory [4]
- 15 Seizure [4]
- 16 Attack [4]
- 17 Clash [4]
- 18 Declaration of war [4]
- 19 Use of CBR weapons [5]
- 20 Begin inter-state war [5]
- 21 Join inter-state war [5]

Years: 1950-2003, Source: COW Inter-State War Data, Version 3.02, Faten et al (2004)

Hstlev: Annual hostility levels reached by India and Pakistan in each annual corresponding dispute

- 1 No militarised action
- 2 Threat to use force
- 3 Display of force
- 4 Use of force
- 5 War

Years: 1950-2003, Source: COW Inter-State War Data, Version 3.02, Faten et al (2004)

Mpi: Pakistan's total imports plus India's total imports as a ratio of Pakistan's total GDP and India's total GDP, Years: 1950-2005, Source: International Financial Statistics 2006 (IMF)

Milbrd1: Pakistan's defence expenditure over GDP as a ratio of India's defence expenditure over GDP, Years: 1950-2005, Sources: Correlates of war data set version 3.02, World Development Indicators 2006 (World Bank), Government Finance Statistics Year Book (IMF) and Economic Survey of Pakistan

Milbrd2: India's defence expenditure over GDP as a ratio of Pakistan's defence expenditure over GDP.

Milbrd 3: Pakistan's defence expenditure over GDP as a ratio of Pakistan's defence expenditure over GDP plus India's defence expenditure over GDP.

Milbrd 4: India's defence expenditure over GDP as a ratio of Pakistan's defence expenditure over GDP plus India's defence expenditure over GDP.

Milbrd5: Average of India's defence expenditure over GDP and Pakistan's defence expenditure over GDP, Years: 1950-2005, Sources: Correlates of war data set version 3.02, World Development Indicators 2006 (World Bank).

Milppi: Pakistan military personnel over Pakistan's total population as a ratio of India's military personnel over India's total population, Years: 1950-2001, Sources: Correlates of war data set version 3.02 and International Financial Statistics 2006 (IMF)

Milpip: India's military personnel over India's total population as a ratio of Pakistan's military personnel over Pakistan's total population. Sources: Correlates of war data set version 3.02 and International Financial Statistics 2006 (IMF)

Poppi: Average of Pakistan's total population and India's total population, Years: 1950-2001, Source: International Financial Statistics 2006 (IMF)

Xmpi: Pakistan's total trade (exports + imports) as a ratio of India's Total trade (exports + imports), Years: 1950-2001, Source: International Financial Statistics 2006 (IMF)

Xmip: India's total trade (exports + imports) as a ratio of Pakistan's total trade (exports + imports). Years: 1950-2005, Source: International Financial Statistics 2006 (IMF)

Xpi: Pakistan's total exports plus India's total exports as a ratio of Pakistan's total GDP plus India's total GDP. Years: 1950-2005, Source: International Financial Statistics 2006 (IMF)

Tpiti: Trade between Pakistan and India as a percentage of Pakistan's total Trade, Years: 1950-2005, Sources: Direction of Trade, Statistics Yearbook, (IMF)

Tpiti: Trade between Pakistan and India as a percentage of India's total trade, Years: 1950-2005, Sources: Direction of Trade, Statistics Yearbook, (IMF)

VolFatal: Precise volume of fatality in each annual corresponding dispute, Years: 1950-2003, Sources: COW Inter-State War Data, Version 3.02 (Faten et al, 2004), CSCW/PRIO Battle Deaths data, CSP Data set on Major Episodes of Political Violence 1946-2006 <http://members.aol.com/cspmngm/warlist.htm>.